

WHAT IS CLAIMED IS:

- 1 1. A lipid formulation, said lipid formulation comprising:
2 a lipid phase, said lipid phase comprising a neutral lipid and a member
3 selected from the group consisting of cationic lipids and mucoadhesive compounds;
4 an aqueous phase; and
5 a therapeutic agent.
- 1 2. A lipid formulation in accordance with claim 1, wherein said neutral
2 lipid is a phospholipid.
- 1 3. A lipid formulation in accordance with claim 2, wherein said
2 phospholipid is a soybean oil-based phospholipid.
- 1 4. A lipid formulation in accordance with claim 2, wherein said
2 phospholipid is a member selected from the group consisting of phosphatidylglycerols (PG),
3 phosphatidylethanolamines (PE), phosphatidylserines (PS) and hydrogenated
4 phosphatidylcholines (PC).
- 1 5. A lipid formulation in accordance with claim 4, wherein said
2 phospholipid is a phosphatidylcholine.
- 1 6. A lipid formulation in accordance with claim 5, wherein said
2 phosphatidylcholine is a member selected from the group consisting of Phospholipon 90H,
3 Phospholipon 80H and mixtures thereof.
- 1 7. A lipid formulation in accordance with claim 1, wherein said lipid
2 phase comprises a cationic lipid.
- 1 8. A lipid formulation in accordance with claim 7, wherein said cationic
2 lipid is a member of the group consisting of stearylamine, DC-Cholesterol,
3 dimethyldioctadecylammonium bromide, or 3B-[N',N'-dimethylaminoethane)-carbamol.
- 1 9. A lipid formulation in accordance with claim 1, wherein said lipid
2 phase comprises a mucoadhesive compound.

1 10. A lipid formulation in accordance with claim 9, wherein said
2 mucoadhesive compound is a member of the group consisting of Carbopol 934 P,
3 polyaxomers, carbomers and plant lectins.

1 11. A lipid formulation in accordance with claim 1, wherein said aqueous
2 phase is a member selected from the group consisting of sterile water, sterile saline and
3 sterile, isotonic aqueous buffer solutions.

1 12. A lipid formulation in accordance with claim 11, wherein said aqueous
2 phase is a sterile, isotonic aqueous solution buffered with borates, acetates, bicarbonates or
3 phosphates in the pH range of 7.0 to 7.8.

1 13. A lipid formulation in accordance with claim 1, wherein said lipid
2 formulation comprises about 0.001 to about 10.000 wt % of said lipid phase and about 90.000
3 wt % to about 99.999 wt % of said aqueous phase.

1 14. A lipid formulation in accordance with claim 1, wherein said lipid
2 formulation comprises about 0.1 wt % of said lipid phase and about 99.0 wt % of said
3 aqueous phase.

1 15. A lipid formulation in accordance with claim 1, wherein said
2 therapeutic agent is present in said aqueous phase.

1 16. A lipid formulation in accordance with claim 1, wherein a
2 therapeutically effective amount of said therapeutic agent is present in said lipid formulation.

1 17. A lipid formulation in accordance with claim 1, wherein said lipid
2 formulation is a liposome.

1 18. A lipid formulation in accordance with claim 1, further comprising a
2 preservative.

1 19. A lipid formulation in accordance with claim 18, wherein said
2 preservative is an antioxidant.

1 20. A lipid formulation in accordance with claim 19, wherein said
2 antioxidant is a member selected from the group consisting of tocoperol, tocopherol
3 derivatives, butylated hydroxyanisole and butylated hydroxytoluene.

1 21. A lipid formulation in accordance with claim 18, wherein said
2 preservative is an anti-microbial agent selected from the group consisting of benzalkonium
3 chloride, benzethonium chloride, chlorobutanol, phenylethyl alcohol and cetyl pyridinium
4 chloride.

1 22. A lipid formulation in accordance with claim 21, wherein said anti-
2 microbial agent is chlorobutanol.

1 23. A lipid formulation in accordance with claim 1, further comprising a
2 modifying agent selected from the group consisting of cholesterol, stearylamine, cholesteryl
3 hemisuccinate, phosphatidic acids, dicetyl phosphate and fatty acids.

1 24. A lipid formulation in accordance with claim 1, further comprising a
2 wetting agent.

1 25. A lipid formulation in accordance with claim 24, wherein said wetting
2 agent is a member selected from the group consisting of polyoxyethylene, sorbitan
3 monolaurate and stearate.

1 26. A lipid formulation in accordance with claim 1, further comprising a
2 thickening agent.

1 27. A lipid formulation in accordance with claim 26, wherein said
2 thickening agent is a member selected from the group consisting of hydroxyethylcellulose,
3 hydroxypropylmethylcellulose, methylcellulose, polyvinyl alcohol and polyvinylpyrrolidone.

1 28. A lipid formulation in accordance with claim 1, wherein said
2 therapeutic agent is a non-steroidal anti-inflammatory drug (NSAID).

1 29. A lipid formulation in accordance with claim 30, wherein said NSAID
2 is a member selected from the group consisting ketoprofen, flurbiprofen, ibuprofen,
3 diclofenac, ketorolac, nepafenac, amfenac and suprofen.

1 30. A lipid formulation in accordance with claim 30, wherein said NSAID
2 is diclofenac.

1 31. A method for treating an ophthalmic disorder in a mammal, said
2 method comprising administering to the eye of said mammal a lipid formulation in
3 accordance with claim 1, wherein said therapeutic agent in said lipid formulation is useful for
4 treating said ophthalmic disorder.

1 32. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is post-operative pain.

1 33. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is ocular inflammation.

1 34. The method in accordance with claim 33, wherein said ocular
2 inflammation results from a member selected from the group consisting of iritis,
3 conjunctivitis, seasonal allergic conjunctivitis, acute and chronic endophthalmitis, anterior
4 uveitis, uveitis associated with systemic diseases, posterior segment uveitis, chorioretinitis,
5 pars planitis, masquerade syndromes including ocular lymphoma, pemphigoid, scleritis,
6 keratitis, severe ocular allergy, corneal abrasion and blood-aqueous barrier disruption.

1 35. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is post-operative ocular inflammation.

1 36. The method in accordance with claim 35, wherein said post-operative
2 ocular inflammation results from a member selected from the group consisting of
3 photorefractive keratectomy, cataract removal surgery, intraocular lens implantation and
4 radial keratotomy.

1 37. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is a fungal or bacterial infection.

1 38. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is herpes ophthalmicus.

1 39. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is endophthalmitis.

1 40. The method in accordance with claim 31, wherein said ophthalmic
2 disorder is intraocular pressure.

1 41. The method in accordance with claim 31, wherein said therapeutic
2 agent is diclofenac.

1 42. The method in accordance with claim 41, wherein said diclofenac is
2 diclofenac sodium.

1 43. A method for treating or preventing ocular inflammation, paracentesis-
2 induced miosis, cystoid macular edema and mydriasis, said method comprising administering
3 a therapeutically effective amount of one or more non-steroidal anti-inflammatory drugs
4 encapsulated or contained within a liposome formulation, said liposome formulation
5 comprising 0.001 to 10.000 wt% lipid phase, and 90.000 to 99.999 wt% aqueous phase.

1 44. The method in accordance with claim 43, wherein said liposome
2 formulation is applied topically, resulting in the transcorneal or transscleral passage or
3 introduction of one or more non-steroidal anti-inflammatory drugs into the eye.

1 45. The method in accordance with claim 43, wherein said lipid phase
2 comprises 0.0 to 90.0 wt% of one or more active agents, 10.0 to 100.0 wt% phospholipid, 0.0
3 to 20.0 wt% antioxidant, and 0.0 to 20% modifying agents; and said aqueous phase comprises
4 0.0 to 10.0 wt% one or more active agents, 0.0 to 5.0 wt% anti-microbial preservative, and
5 90.0 to 100.0 wt% aqueous solution.

1 46. The method in accordance with claim 45, wherein said active agent(s)
2 are non-steroidal anti-inflammatory drugs.

1 47. The method in accordance with claim 46, wherein said non-steroidal
2 anti-inflammatory drugs are selected from the group consisting of ketoprofen, flurbiprofen,
3 ibuprofen, diclofenac, ketorolac, nepafenac, amfenac and suprofen.

1 48. The method in accordance with claim 47, wherein said non-steroidal
2 anti-inflammatory drug is diclofenac.

1 49. The method in accordance with claim 43, wherein said ocular
2 inflammation is a symptom of iritis, conjunctivitis, seasonal allergic conjunctivitis, post-

3 operative inflammation, acute and chronic endophthalmitis, anterior uveitis, uveitis
4 associated with systemic diseases, posterior segment uveitis, chorioretinitis, pars planitis,
5 masquerade syndromes including ocular lymphoma, pemphigoid, scleritis, keratitis, severe
6 ocular allergy, corneal abrasion, blood-aqueous barrier disruption or ocular trauma.

1 50. The method in accordance with claim 49, wherein said post-operative
2 inflammation is caused by photorefractive keratectomy, cataract removal surgery, intraocular
3 lens implantation or radial keratotomy.

1 51. A liposome formulation comprising: a therapeutic agent; 0.001 to
2 10.000 wt% of a lipid phase; and 90.000 to 99.999 wt% of an aqueous phase.

1 52. The liposome formulation in accordance with claim 51, wherein said
2 lipid phase comprises a phospholipid.